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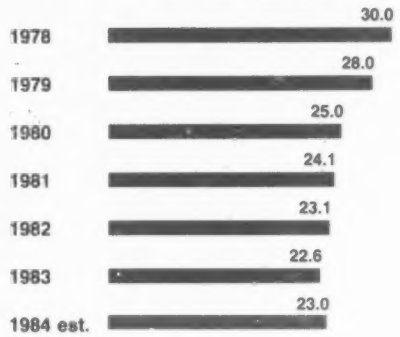
1978-1984

U.S. AUTOMOTIVE MARKET FOR ZINC DIE CASTING

AVERAGE ZINC D.C. MARKET BY MODEL YEARS IN LBS.



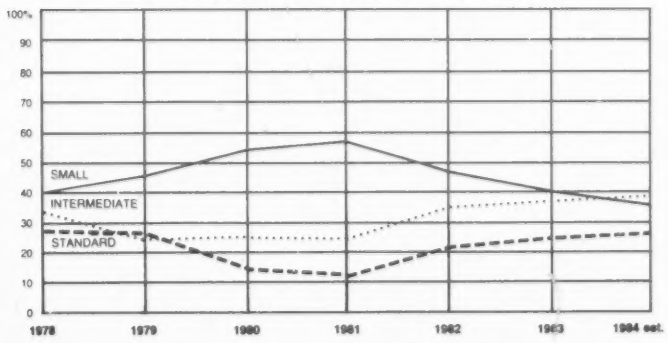
The average U.S.-built automobile utilized an estimated 23.0 lbs. of zinc die castings in 1984, up 1.8% from the 22.6 lbs. used in 1983 models, according to a year-end survey by the Zinc Institute (ZI). The .4 lb. increase marks an end to a nine-year decline in the major zinc die casting category.

Based on design data secured from the four top American car makers, the survey attributed the turnaround to the wider acceptance of ThinWall zinc die castings by automotive designers and engineers. ThinWall zinc components—often formulated with computer assistance—make maximum use of the metal's strength and, as such, are lighter and more functional than conventionally designed die castings.

AVERAGE ZINC D.C. OPTIONAL EQUIPMENT IN LBS.

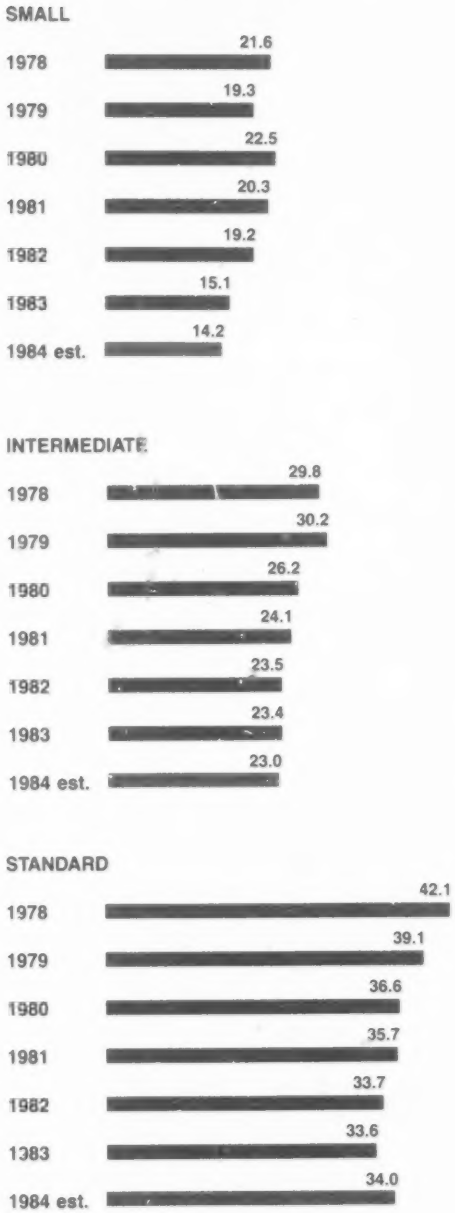
The survey also tracked the amount of zinc die castings used to build optional equipment in U.S. cars, reporting 9.5 lbs. of zinc components went into the typical 1984 model by way of accessories. That amount has been relatively stable over the past seven years, fluctuating between the 9.5 and the 9.9 lb. marks.

MARKET SHARE BY CLASS SIZE IN PERCENT



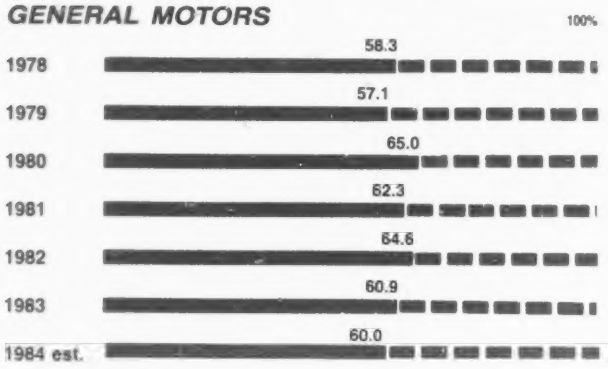
The overall rise in the use of zinc die castings in the average 1984 car is an indication that zinc is no longer losing ground in this era of downsizing. Automotive engineers are discovering that zinc die castings excel over plastics and other materials in applications where added strength and quality is a must.

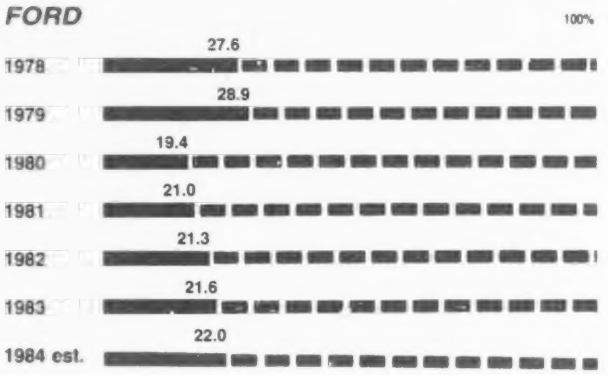
AVERAGE ZINC D.C. MARKET BY SIZE CLASS IN LBS.

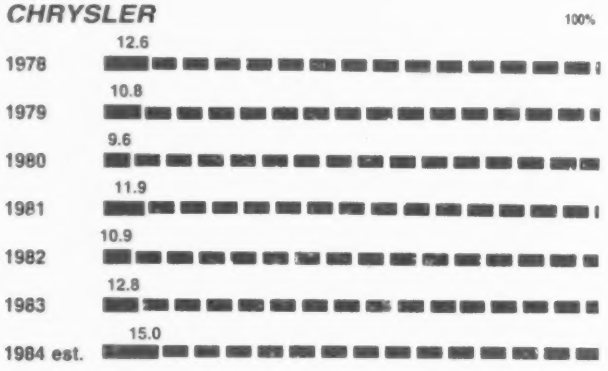


Analyzing the data in terms of size classifications, the survey noted that the average small car utilized 14.2 lbs. of zinc die cast components; the typical intermediate rolled with 23 lbs.; and standard models functioned with 34.0 lbs. In comparison, the 1983 totals by class were: small, 15.1 lbs.; intermediate, 23.4.; and standard 33.6 lbs.

MARKET SHARE BY MANUFACTURER IN PERCENT



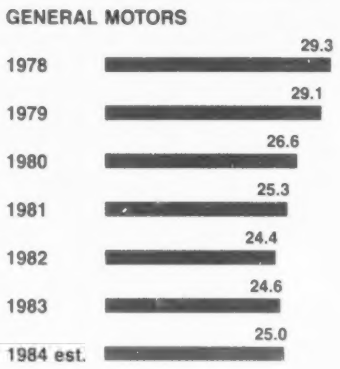


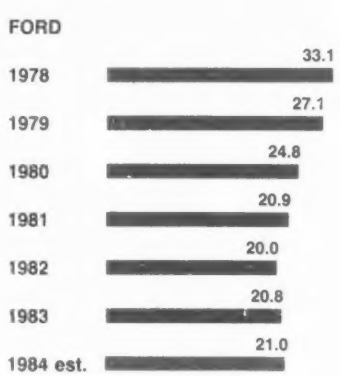


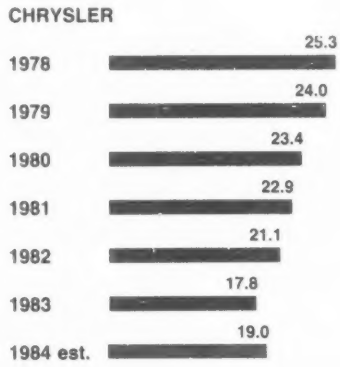
According to survey estimates, Chrysler led the Big Four in per car usage gains, with its average 1984 model checking out with 19.0 lbs. of zinc die cast components, compared to 17.8 lbs. in 1983. General Motors tallied a 25.0 lb. average, in contrast to 24.6 lbs. the previous year. And the Ford figure was 21.0 lbs., up from 20.8 lbs. Only American Motors registered a decrease, with its per car use of zinc dropping from 17.6 lbs. in 1983 to 14.8 lbs. in 1984.

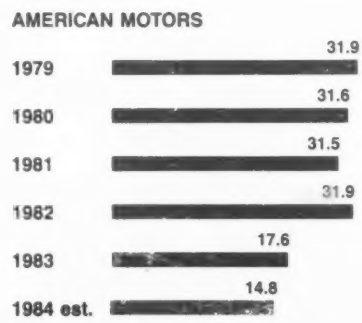
No after-market production, truck or van use was included in the survey, which is now in its tenth year. It has been estimated that after-market zinc die castings account for 3-to-5 lbs. per vehicle, and that the typical truck uses between 15-to-20 lbs.

AVERAGE ZINC D.C. MARKET BY MANUFACTURER IN LBS.









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